CLAIMS

1. A method for detecting the expression of an envelope protein or polypeptide of a human endogenous retrovirus, characterized in that the protein or polypeptide has a polypeptide sequence which comprises the sequence SEQ ID No. 1 or a fragment of SEQ ID No. 1 of at least five amino acids, or a sequence which exhibits, for any series of 20 amino acids, at least 80%, preferably at least 90%, or even at least 95% identity with the sequence SEQ ID No. 1 or with a fragment of SEQ ID No. 1, and in that the fusogenic power of said protein or of said fragment in cells of a cellular tissue or of a cell culture is detected by demonstrating the formation of syncytia.

2. A method for detecting the expression of an envelope protein or polypeptide of a human endogenous retrovirus, characterized in that the protein or polypeptide has a polypeptide sequence which exhibits, for any series of 20 amino acids, at least 80%, preferably at least 90%, or even at least 95% identity with the sequence SEQ ID No. 1, and in that the fusogenic power of said protein in cells of a cellular tissue or of a cell culture is detected by demonstrating the formation of syncytia.

3. The method as claimed in claim 1 or 2, characterized in that the protein is encoded by the *env* gene of the HERV-W endogenous retrovirus.

4. The method as claimed in claim 3, characterized in that the protein is encoded by an open reading frame located on chromosome 7 of the human genome.

5. The method as claimed in claim 4, characterized in that the protein has a polypeptide sequence which exhibits, for any series of 20 amino acids, at least

80%, preferably at least 90%, or even at least 95% identity with the sequence SEQ ID No. 1.

6. The method as claimed in claim 5, characterized in that the protein has a polypeptide sequence which consists of SEQ ID No. 1.

7. The method as claimed in claim 1, characterized in that the polypeptide has a polypeptide sequence which exhibits, for any series of 20 amino acids, at least 80%, preferably at least 90%, or even at least 95% identity with the polypeptide sequence which begins at amino acid 448 and ends at amino acid 538 of SEQ ID No. 1.

8. The method as claimed in claim 7, characterized in that the polypeptide has a polypeptide sequence which begins at amino acid 448 and ends at amino acid 538 of SEQ ID No. 1.

9. The method as claimed in any one of the preceding claims, characterized in that the cells of said tissue or of said cell culture are chosen from bone cells, muscle cells, placenta cells, endothelial cells, in particular of blood vessels, epithelial cells, glial cells and tumor cells or cells derived from tumor cell lines.

10. The method as claimed in any one of the preceding claims, characterized in that the detection of the fusogenic power of said protein consists in:
obtaining a vector for expression of said protein, based on which the expression of the protein or of its gene is under the control of a promoter, preferably a strong promoter,
transfecting cells with the vector obtained, so as to obtain producer cells expressing, at their surface, said protein, and

observing the formation of syncytia or the absence of formation of syncytia.

11. The method as claimed in any one of the preceding claims, characterized in that the detection of the fusogenic power of the protein consists in:
obtaining a vector for expression of said protein, based on which the expression of the protein or of its gene is under the control of a promoter, preferably a strong promoter,
transfecting cells with the vector obtained, so as to obtain producer cells expressing, at their surface, said protein,
coculturing naïve indicator cells, expressing, at their surface, a receptor for said protein, in the presence of said producer cells, and
observing the formation of syncytia or the absence of formation of syncytia.

12. The use of a gene or of a nucleic acid, or of a fragment of gene or of a nucleic acid, coding for a protein or a polypeptide as defined in claim 8, under suitable conditions which allow its expression, for preparing a therapeutic or prophylactic composition.

13. The use as claimed in claim 12, characterized in that said composition is intended for the treatment of cancers.

14. The use as claimed in claim 12, characterized in that said composition is intended to prevent a deficiency in development of the placenta or to prevent a deficiency in the natural formation of any other type of syncytia, said deficiency being associated with a pathology.

15. The use as claimed in claim 12, 13 or 14, characterized in that the composition is intended for treatment by gene therapy.

16. A therapeutic or prophylactic composition comprising a fragment of gene or of nucleic acid coding for a polypeptide as defined in claim 7 or 8.

17. The composition as claimed in claim 16, characterized in that it also comprises a heterologous or autologous promoter, preferably a heterologous promoter, for the expression of said protein or of said polypeptide.

18. An expression vector comprising at least one fragment of gene or of nucleic acid coding for a polypeptide as defined in claim 7 or 8, and elements required for its expression in a host cell.

19. A host cell comprising at least one vector as claimed in claim 18.

20. A therapeutic or prophylactic composition comprising at least one expression vector as claimed in claim 18.

21. The use of a composition as claimed in claim 16, 17 or 20, or of a composition comprising comprising [sic] a gene or a nucleic acid, or a fragment of gene or of nucleic acid, coding for a protein or a polypeptide as defined in claim [sic] in any one of claims 1 to 6, for producing a medicament intended for the treatment of cancers by destroying cancer cells by means of the formation of syncytia.

22. The use of a composition as claimed in claim 16, 17 or 20, or of a composition comprising comprising [sic] a gene or a nucleic acid, or a fragment of gene

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or of nucleic acid, coding for a protein or a polypeptide as defined in claim [sic] in any one of claims 1 to 6, for producing a medicament intended to prevent a deficiency in development of the placenta or to prevent a deficiency in the natural formation of any other type of syncytia, said deficiency being associated with a pathology.

23. The use as claimed in claim 21 or 22, characterized in that it also comprises a heterologous or autologous promoter, preferably a heterologous promoter, for the expression of said protein or of said polypeptide.

24. The use as claimed in claim 21 or 22, characterized in that said gene or nucleic acid, or said fragment of gene or of nucleic acid, is integrated into a gene therapy vector.

25. A gene therapy vector comprising a polypeptide as defined in claim 7 or 8.

26. A vector as claimed in claim 25, chosen from a retroviral vector of the MLV type, a lentiviral vector pseudotyped with a protein or a polypeptide as defined in any one of claims 1 to 8, and a synthetic vector.

27. A therapeutic composition comprising, inter alia, a therapy vector as defined in either of claims 25 and 26, and an antisense nucleic acid sequence or oligonucleotide.

28. A therapeutic composition comprising, inter alia, a therapy vector as defined in either of claims 25 and 26, and a gene of therapeutic interest.

29. A therapeutic composition comprising, inter alia, a cellular vector comprising a cell expressing a

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protein or a polypeptide as defined in any one of claims 1 to 9.

30. A method for selecting medicinal substances or drugs, or gene/prodrug systems, capable of having a qualitative and/or quantitative effect on the fusogenic power of a protein or of a polypeptide as defined in any one of claims 1 to 8, according to which said medicinal substance or drug, or said gene/prodrug system, is brought into contact with cells of a cell culture expressing said protein or said polypeptide, and a regression or a disappearance of the formation of syncytia is observed.

31. A therapeutic composition comprising, inter alia, an antisense nucleic acid sequence or oligonucleotide capable of hybridizing to a gene or a fragment of gene, or to a nucleic acid or fragment of nucleic acid, coding for a protein or a polypeptide as defined in any one of claims 1 to 8.

32. The use of a ligand capable of recognizing and binding to the receptor for the protein defined in SEQ ID No. 1, for producing a medicament intended for the treatment of cancers by destroying cancer cells by means of formation of syncytia.

33. The use of a ligand capable of recognizing and of binding to the receptor of the protein defined in SEQ ID No. 1, for producing a medicament intended to prevent a deficiency in development of the placenta or to prevent a deficiency in the natural formation of any other type of syncytia, said deficiency being associated with a pathology.

34. The use as claimed in claim 32 or 33, characterized in that the [lacuna] a ligand chosen from a monoclonal antibody, a polyclonal antibody, a

transmembrane antibody or a fragment of said antibodies, and an inhibitory molecule, said ligand being specific for the receptor of the protein defined in SEQ ID No. 1.

35. The use of a gene of therapeutic interest coding for a ligand capable of recognizing and of binding to the receptor for the protein defined in SEQ ID No. 1, and being placed under control of the elements required to ensure its expression *in vivo*, for producing a medicament intended for the treatment of cancers by destroying cancer cells by means of formation of syncytia.

36. The use of a gene of therapeutic interest coding for a ligand capable of recognizing and of binding to the receptor for the protein defined in SEQ ID No. 1, and being placed under the control of the elements required to ensure its expression *in vivo*, for producing a medicament intended intended [sic] to prevent a deficiency in development of the placenta or to prevent a deficiency in the natural formation of any other type of syncytia, said deficiency being associated with a pathology.

37. The use of the receptor for the protein identified in SEQ ID No. 1, for producing a gene therapy vector intended to target cells producing the protein identified in SEQ ID No. 1 in a constitutive or induced manner.